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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/838,242	04/16/1997	DOUGLAS M. DILLON	PD-N96055	8644

7590

04/08/2004

HUGHES ELECTRONICS CORPORATION
PATENT DOCKET ADMINISTRATIONM
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EXAMINER

BROWN, RUEBEN M

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/838,242

Applicant(s)

DILLON, DOUGLAS M.

Examiner

Reuben M. Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 78-134 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 78-134 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 6/13/2003 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/838,242 is acceptable and a CPA has been established. An action on the CPA follows.

Response to Amendment

2. The declaration filed on 4/7/2003 under 37 CFR 1.131 is sufficient to overcome the Tiedemann reference, (USPGPUB 2002/0012332 A1).

Response to Arguments

3. Applicant's arguments filed 7/24/2003 have been fully considered but they are not persuasive. With respect to claims 78, 99, 127 & 130, applicant requests a reference to support the Official Notice taken in the previous Office Action. Examiner took Official Notice that at the time the invention was made, it was known to consider the bit rate of a communication channel. The Haoui reference provided by examiner teaches some of the advantages of a lower bit rate communication channel, including reducing BER, see col. 5, lines 25-67.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 78-80, 82-86, 88-99, 101, 104-113, 116-123, 126-127 & 130 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiff, (U.S. PGPUB 2001/0007552 A1) in view of Yun, (U.S. Pat # 5,886,988) and Haoui, (U.S. Pat # 5,742,640).

Considering claims 78, 107, 117 & 127, the claimed system comprising a transmitter configured to transmit data on one of a selected first or second satellite communication channels, such that a selection between the first or second satellite communication channels is made so that if the signal strength of one of the satellite channels is below a certain threshold, then the other satellite channel is selected reads on the operation of Schiff, (Abstract). The instant reference teaches that as a mobile user traverses a geographic region or as the footprint of a satellite moves, it is necessary to handoff the current communication channel of a user receiver to the next appropriate communication channel. According to Fig. 1 & Fig. 2, if the user receiver is still in the footprint of the current satellite transmitter then the instant user receiver may receive the next appropriate communication channel from the same transmitter, see also page 5, [0059] and [0061].

Furthermore, Schiff teaches that the criterion for selecting the communication channel is the detected strength of the channel, (page 4, [0051]). In other words, the next communication channel for a user receiver is selected if the detected strength of the current channel is above a certain threshold, which reads on the claimed subject matter, (Fig. 7; page 9, [0095], [0098] & [0101]). However, Schiff does not discuss using the load factor as a parameter in selecting of the communication channel for a user receiver.

Nevertheless, Yun teaches making a channel selection based at least partially on the load factor of a selected channel, (Abstract, lines 26-27; col. 7, lines 15-17 & col. 22, lines 34-53). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify the reference, by including the load factor in the channel assignment/reassignment algorithm instead of only using the RSSI, at least for the desirable improvement taught by Yun (col. 4, lines 5-28; col. 4, lines 56-67 & col. 11, lines 28-35) of more accurately predicting the quality of information transmitted on a communication channel, which improves the quality for the customers.

Moreover, as for the additionally featured limitation of the first selected channel having a bit rate, (BR) lower than the other communication channel, Haoui teaches that when a particular channel has a lower bit rate, then the BER of the channel generally is also reduced, col. 5, lines 25-67. Haoui also teaches that lowering the BR results in an increase in the power per bit. It would have been obvious for one ordinary skill in the art at the time the invention was made, to

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operate Schiff in a manner wherein the BR is considered in a making a channel selection, at least for the known advantage of selecting a channel with a lower BR for the benefit of lowering the BER of the transmission.

The instant references are deemed properly combinable, in that all of the references are operable with wireless/satellite transmission to user terminals. Just as important, the references discuss being applicable to various known transmission algorithms, such as TDMA, CDMA and or SDMA.

Considering claim 79, the base station/gateway in Schiff makes channel selection, (page, 3, [0030]; page 8, [0086]; page, 9 [0101] thru [0103] & page 10, [0112] thru [0113]).

Considering claims 80, 86, 108, 110, 118 & 120, the receiver of Schiff (page 9, [0097] & [0101]) includes the well-known feature of a signal strength detector.

Considering claim 82, the claimed indication of the selected communication channel at least reads on the disclosure in Schiff of reserving a communication channel for the user receiver, page 9, [0099] thru [0103].

Considering claims 83, 91-92, 109, 112, 119 & 122, see Yun col. 7, lines 9-16; col. 11, lines 29-40; col. 12, lines 46-55; col. 21, lines 65-67 thru col. 22, lines 1-10 & col. 22, lines 38-40.

Considering claims 84 & 101, the operation of the searcher receiver 418 and data receivers 416A-N read on the claimed features of a tuner and a demodulator; see page 6, [0071] & [0075] and page 8, [0089]. Yun teaches that the searcher receiver 418 searches for pilot signals, and the data receivers 416A-N demodulate the received signals.

Considering claims 85, 88-90, 111 & 121, the instant claimed feature recites that the receiver makes the channel selection and transmits an indication of the selection to the transmitter. Schiff clearly teaches an alternative embodiment, wherein the user terminal (124 or 126) operate as a transceiver 400 and includes a control processor 420 that selects the forward channel or frequency of the user terminal; see page, [0071]. Schiff also specifically points out that the user terminal is enabled to make channel determination and report the instant determination to the gateway or base station, which reads on claim 88; see page 9, [0098] & [0101].

As for claims 89, 90, 111 & 121, regarding the claimed feature of using a packet network, Schiff discusses using digital signals, which generally utilize a packet technology, page 6, [0070], [0071] & [0072]. However, the references do not explicitly discuss the use of a packet network. Nevertheless, Official Notice is taken that at the time the invention was made, the use of packet networks, with wireless technology was very well known in the art. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Schiff to operate over a packet network, such as an ATM network for instance, at least for the known

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advantage of transmitting data at a higher rate and the use of multiple simultaneous circuits, i.e. virtual circuits, VC. As for claim 90, Schiff (Fig. 1; page 5, [0059]) & Yun are both directed to satellite communication and thus provide a satellite return channel.

Considering claims 93-96 & 104-105, Official Notice is taken that at the time the invention was made, left-hand and right-hand circularly polarized signals; multiple frequencies and multiple transponders were well known in the art of satellite transmission. It would have been obvious for one of ordinary skill in the art the time the invention was made, to operate Schiff in manner wherein left-hand and right-hand circularly polarized signals, multiple frequencies and multiple transponders are employed, at least for the known advantage of providing additional communication channels to end users.

Considering claim 97, as shown in Schiff, Fig. 1 & Fig. 2 multiple beams, i.e. channels are transmitted from the satellite.

Considering claims 98, 106, 116 & 126, the claimed feature of the load factor including the load level of the channel and the bit rate of the channel reads on the combination of Yun, (col. 22, lines 38-45) and Haoui, (col. 5, lines 45-67). Yun teaches the benefit of considering the load level in channel assignments, while Haoui teaches the advantages of considering the bit rate in channel assignments.

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Considering claims 99, 113, 123 & 130, the claimed system comprises elements that correspond with subject matter mentioned above in the rejection of claims 78, 107 & 117, and are likewise treated. Claims 99 & 130, include the additional limitation that one of the communication channels has a higher power level than the other communication channel. Examiner points out that Haoui discloses the advantages of adjusting the power level of a communication channel, (col. 5, lines 45-67 & col. 10, lines 55-64, which reads on one communication channel being at a power level higher than another communication channel.

6. Claims 81, 87, 100, 102-103, 114-115, 124-125, 128, 129, 131-134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiff, Yun & Haoui as applied to claims 80 & 86 above, and further in view of Soliman, (U.S. Pat # 5,859,838).

Considering claims 81 & 87, Schiff discusses the use of signal strength in channel selection (page 3, [0027]); Yun discusses the use of received signal strength, RSSI and signal-to-interference-to-noise ratio, SINR (col. 4, lines 5-35 & col. 12, lines 42-67); and Haoui discusses the use of power levels and signal-to-noise ratio, SNR, (col. 10, lines 55-65 & col. 12, lines 47-65). However, the provided references do not specifically discuss the relevance of the well-known communication channel parameter of E_b/N_o , (energy-per-bit to noise ratio). Nevertheless, at the time the invention was made, this parameter was well known as an indicator of the quality of the communication channel and is taught by Soliman, (col. 4, lines 50-63; col. 7, lines 5-10 & col. 7, lines 51-64). It would have been obvious for one of ordinary skill in the art the time the invention was made, to modify Schiff with the technique of using the E_b/N_o , in determining the

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quality of a communication channel discussed by Soliman, at least for the desirable improvement of more effectively tracking the quality of the instant communication channel.

Considering claims 100, 102, 114-115, 124-125, 128-129 & 131-134, the claimed elements and method steps correspond with the combination of elements mentioned above in the rejection of claims 86-92 and are likewise analyzed.

Considering claim 103, Schiff (Fig. 1; page 5, [0059]) & Yun are both directed to satellite communication and thus provide a satellite return channel.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Freeburg Teaches advantages of using a wireless technology over an ATM network (i.e., packet switched network), see col. 1, lines 32-67).

B) Rudrapatna Discloses wireless data service over an ATM network.

C) Jaisingh Discloses wireless data service over an ATM network.

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*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington,
VA., Sixth Floor (Receptionist).*

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Reuben M. Brown, whose telephone number is (703) 305-2399.
The examiner can normally be reached on M-F (8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Andrew I. Faile can be reached on (703) 305-4380. The fax phone numbers for the
organization where this application or proceeding is assigned is (703) 872-9306 for regular
communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the receptionist whose telephone number is (703) 305-4700.

Reuben M. Brown

REUBEN M. BROWN
PATENT EXAMINER
